Purpose provide you with enough info to make a decision on a program which will enhance your planning process.

~~1982~~

CAE/M PLANNING PROGRAM.

1982 CAD/CAM PROGRAM

Cover
INPUT who, what
Develop baseline on CAEM and our perspective & the issues & opportunities.
Expand - detail on key areas which opened more doors
Trip to Barrington to do Need
Present detailed solution via CAEM proj.

Pat O'Brien
- Prospectus
- Use Cases

INPUT PROFILE

- FORMED 1974
- A LEADING CONSULTANT COMPANY TO THE INFORMATION INDUSTRY
- SPECIALISTS IN:
  - PLANNING AND FORECASTING SERVICES
  - TREND ANALYSIS
  - MARKET RESEARCH
  - COMPETITIVE ANALYSIS
  - BUSINESS AND ACQUISITION STRATEGIES

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FUNCTIONAL SPECIALTIES

- COMPUTER SERVICES/SOFTWARE
- FIELD SERVICE MAINTENANCE
- LARGE SCALE EDP
- DATA COMMUNICATIONS
- INTELLIGENT OFFICE SYSTEMS
- TURNKEY SYSTEMS
- DATA BASES
- ENGINEERING/MANUFACTURING
- CAD/CAM

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METHODOLOGY
PRODUCTS.

- IN-DEPTH RESEARCH
- ANALYSIS AND INTERPRETATION
- FORECASTS AND RECOMMENDATIONS
- ~~INFORMATION VEHICLES~~
  - REPORTS
  - CONFERENCES
  - PRESENTATIONS
  - INQUIRY SERVICE
  - FILES AND DATA BASES

INPUT

DELIVERY

SERVICES

MODES

- SUBSCRIPTION PROGRAMS — expand
- MULTICLIENT STUDIES
- CUSTOM STUDIES
- ON-GOING SUPPORT

MANAGEMENT PLANNING PROGRAM
FOR THE
INFORMATION SERVICES INDUSTRY

- PROCESSING SERVICES
- PROFESSIONAL SERVICES
- SOFTWARE PRODUCTS
- ON-LINE DATA BASES
- TURNKEY SYSTEMS

COMPANY ANALYSIS AND MONITORING PROGRAM
FOR THE
INFORMATION SERVICES INDUSTRY

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MANAGEMENT PLANNING PROGRAM
IN
FIELD SERVICE

- HARDWARE MAINTENANCE
- SOFTWARE MAINTENANCE
- BUSINESS ISSUES

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MANAGEMENT PLANNING PROGRAM
IN
INFORMATION SYSTEMS

- MANAGEMENT ISSUES
- COMPUTER/COMMUNICATIONS TRENDS
- SYSTEMS DEVELOPMENT
- OFFICE OF THE FUTURE
- RESIDUAL VALUE FORECASTS
- VENDOR ANALYSIS

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MULTICLIENT STUDY TOPICS

- USER SITE HARDWARE SERVICES
- PERSONAL COMPUTERS IN LARGE COMPANIES
- STRATEGIES FOR COMPETING IN THE IBM COMPATIBLE MARKET
- DIGITAL COMMUNICATIONS NETWORKS
- IMPROVING PRODUCTIVITY OF SOFTWARE IMPLEMENTATION
- IMPROVING THE PRODUCTIVITY OF ENGINEERING AND MANUFACTURING USING CAD/CAM
- INTERNATIONAL MARKET OPPORTUNITIES FOR ON-LINE DATA BASE SERVICES

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CUSTOM CONSULTING PROJECTS

- OVER 100 PROJECTS COMPLETED IN 1981
- PLANNING FOR IMPLEMENTATION OF NEW TECHNOLOGY
- MARKETS FOR NEW PRODUCTS AND SERVICES
- PRICING ANALYSIS
- VENDOR ANALYSIS
- SOFTWARE DEVELOPMENT COST ESTIMATES
- EXECUTIVE BRIEFINGS AND CONSULTING

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PARTIAL LIST OF CLIENTS

ANACOMP, INC.
ARTHUR ANDERSEN & COMPANY
AUTOMATIC DATA PROCESSING
AVCO CORPORATION
BOEING COMPUTER SERVICES
COMPUTER SCIENCES CORPORATION
COMSHARE, INC.
CONTROL DATA CORPORATION
DUN & BRADSTREET CORPORATION
ELECTRONIC DATA SYSTEMS
GENERAL ELECTRIC INFORMATION SERVICES
GSI, INC.
HONEYWELL, INC.
INFORMATICS, INC.
MANAGEMENT SCIENCE AMERICA, INC.
MARTIN MARIETTA DATA SYSTEMS
MC DONNELL DOUGLAS AUTOMATION COMPANY
MC GRAW HILL, INC.
MOORE BUSINESS FORMS, INC.
NATIONAL CSS
A. O. SMITH
STERLING SOFTWARE, INC.
SUN INFORMATION SERVICES
UNITED COMPUTING SYSTEMS, INC.
UNIVERSITY COMPUTING COMPANY
XEROX CORPORATION

COMPUTER
AIDED
DESIGN
ENGINEERING
and **C**OMPUTER
AIDED
MANUFACTURING

INPUT

THE PROGRAM

- AN ANNUAL SUBSCRIPTION PROGRAM
  - JULY 1 TO JUNE 30
- REPORTS
  - ANNUAL REPORT
  - PLANNING SUPPORT STUDIES
  - TECHNOLOGY AND MANAGEMENT ISSUE ~~BRIEFS~~ REPORTS
- ANNUAL CLIENT CONFERENCE
- INQUIRY SERVICE

CLIENT BENEFITS

- PROFESSIONAL, INDEPENDENT RESEARCH AND ANALYSIS
- CONCISE, FOCUSED INFORMATION
- PLANNING SUPPORT
- DECISION SUPPORT

CAE/M

CAD/CAM CAPABILITIES → broadens

PERSPECTIVE

INPUT

CAD/CAM
MULTICLIENT STUDY

INPUT

OBJECTIVES

- PROVIDE VENDORS AND USERS WITH
  - IN-DEPTH RESEARCH
  - RELEVANT INFORMATION
- ANALYZE CAD/CAM FORCES
  - VENDORS
  - USERS
  - TECHNOLOGY
  - MARKET
- FOCUS ON THE USER
  - CHARACTERISTICS
  - NEEDS
  - PERSPECTIVES

OPTIONAL

Bound the problem.

SCOPE

- INTERNATIONAL
  - EMPHASIS ON U.S.
  - CHECK EUROPE, JAPAN
- APPLICATION SEGMENTS
  - MECHANICAL
  - ELECTRONICS
  - ARCHITECTURAL

OPTIONAL

SCOPE

- ANALYZE AND FORECAST
  - MANAGEMENT ISSUES
  - MARKETS
  - TECHNOLOGY
  - USE FACTORS
- SYSTEMS AND SERVICES
  - TURNKEY SYSTEMS
  - SOFTWARE PRODUCTS
  - REMOTE COMPUTING SERVICES
  - COMPUTER HARDWARE

INPUT

STUDY TOPICS

- INSTALLATIONS
  - PRODUCT TYPES
  - VENDORS
  - RATINGS
- DECISION FACTORS
  - SYSTEM SELECTION
  - SYSTEM JUSTIFICATION
- OPERATIONAL CONSIDERATIONS
  - COSTS
  - TRAINING
  - OPERATORS
  - LOCATION
  - SECURITY
  - MAINTENANCE AND SUPPORT

INPUT

STUDY TOPICS (Cont.)

- PRODUCTIVITY IMPROVEMENTS
  - OVERALL
  - BY FUNCTION
- HARDWARE
  - DISPLAYS
  - ARCHITECTURES
  - COLOR
  - TRENDS
- SOFTWARE
  - IMPORTANCE OF FUNCTIONS
  - RATINGS
  - USE OF PACKAGES
  - STANDARDS
  - TRENDS

STUDY TOPICS (Cont.)

- INTEGRATION
  - STANDARDS
  - OBSTACLES
  - ORGANIZATION IMPACTS
- APPLICATION-SPECIFIC ISSUES
- GOVERNMENT AND UNIVERSITY PROGRAMS
- MARKET FACTORS
  - SIZE AND GROWTH
  - PRODUCT DELIVERY MODES
  - DRIVING FORCES
  - TRENDS

TIMING

- PROJECT START — JANUARY, 1981
- INTERVIEWS — MARCH - SEPTEMBER, 1981
- ANALYSIS — JUNE - OCTOBER, 1981
- REPORT DELIVERY — DECEMBER, 1981- FEBRUARY, 1982

Extensive study
Size

REPORT VOLUMES

I	USER ISSUES AND CONSIDERATIONS
II	MARKET ANALYSIS AND FORECASTS
III	MECHANICAL APPLICATIONS
IV	ELECTRONICS APPLICATIONS
V	ARCHITECTURAL APPLICATIONS
VI	INTERNATIONAL ADDENDUM

MARKET ANALYSIS
&
FORECASTS

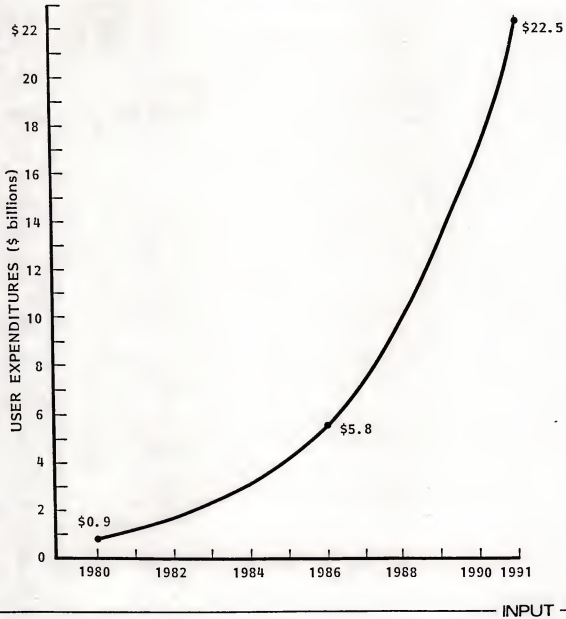
INPUT

MARKET ANALYSIS & FORECASTS

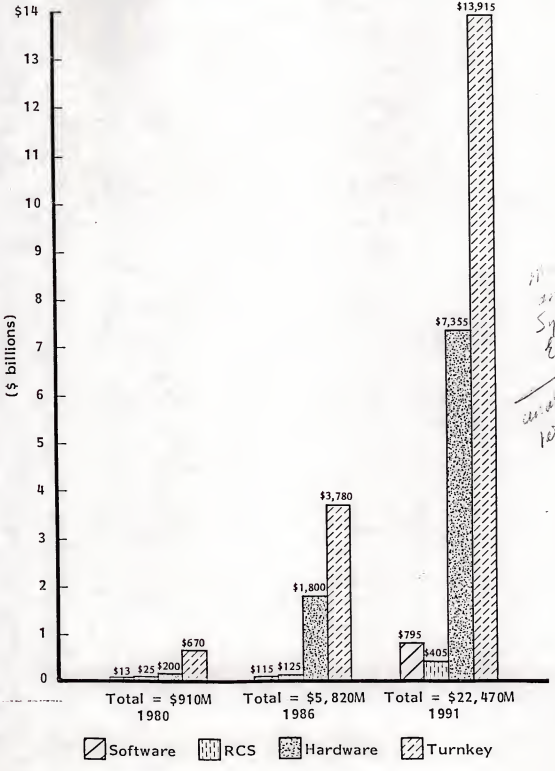
- MARKET STRUCTURE
- DELIVERY MODE FORECASTS
  - TURNKEY
  - SOFTWARE
  - RCS
  - HARDWARE
- APPLICATION FORECASTS
  - MECHANICAL
  - ELECTRONICS
  - ARCHITECTURAL
  - OTHER
- MARKET FORCES
- COMPETITIVE CONSIDERATIONS

TOTAL CAD/CAM MARKET GROWTH

($ billions)



USER EXPENDITURES ON CAD/CAM BY DELIVERY MODE



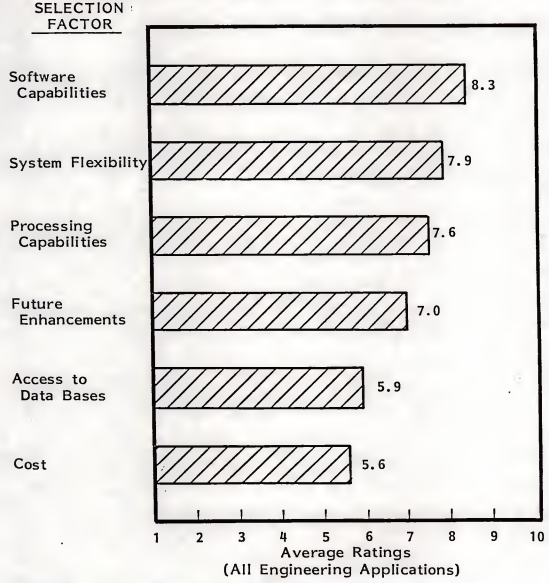
USER CONSIDERATIONS

INPUT

USER CONSIDERATIONS

- ~~FOCUS ON COMMON ISSUES~~
- BROADER PERSPECTIVE
- EXPERIENCES AND NEEDS
  - SYSTEM SELECTION AND USE
  - GRAPHICS DEVICES
  - SOFTWARE
  - VENDOR SUPPORT
- ~~PRODUCTS AND SERVICES~~
- GOVERNMENT AND UNIVERSITY PROGRAMS
- FUTURE DIRECTIONS
  - ~~SYSTEMS ARCHITECTURES~~
  - PRODUCTS AND DELIVERY MODES
- MANAGEMENT CONSIDERATIONS

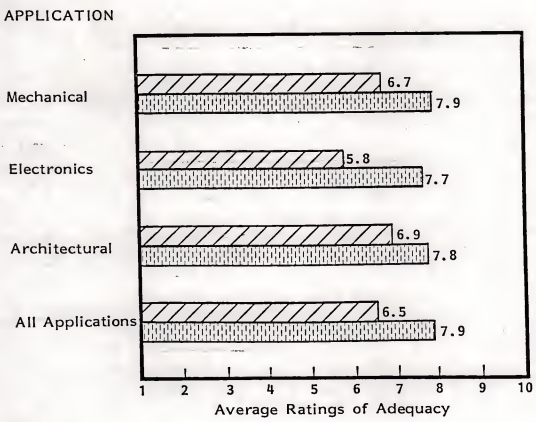
RESPONDENTS' RATINGS - SYSTEM SELECTION FACTORS



SCALE: 1 = No Impact, 10 = Major Impact

INPUT

SOFTWARE ADEQUACY



Scale: 1 = Very Poor, 10 = Excellent

INPUT

SYSTEM EVALUATION - SYSTEM MANAGEMENT CONSIDERATIONS

- Utilization Measurement/Reporting
  - Activity Logging
    - Central System
    - Workstations
    - Individuals
    - Project and Contract
  - Reporting
    - Utilization Accounting
    - Report Writer
    - Accounting Package Hooks
- Security
  - System Access/Log-on
  - File Access Protection
  - File Back-up/Save
  - File Recovery
- System Control
  - Workstation/Terminal Control
  - System Partition Control
  - System Activity/Performance Monitoring
  - Error Logging and Reporting
  - System Recovery/Restart
  - File Control (Purge, Restore, etc.)
  - Operator Messages (Clarity, Extent)
- User Maintenance
  - P. M. Requirements
  - Diagnostic Capabilities

XCADUR153

MECHANICAL APPLICATIONS

INPUT

MECHANICAL APPLICATIONS

- SYSTEM ISSUES
  - SYSTEM USAGE
  - SELECTION FACTORS
  - BENEFIT RATINGS
  - SATISFACTION LEVELS
  - EXPANSION PLANS AND NEEDS
- DESIGN AND ANALYSIS
  - REQUIREMENTS AND RATINGS
  - 3-D GEOMETRY
  - DYNAMIC MOTION
  - SOLIDS MODELING
  - FINITE ELEMENT MODELING
  - ANALYSIS
- USE FACTORS
  - RESPONSE TIME
  - TRAINING
  - PRODUCTIVITY IMPROVEMENTS
  - CONVENTIONAL DRAWINGS
- MANUFACTURING ENGINEERING
  - NC
  - GROUP TECHNOLOGY
  - MRP

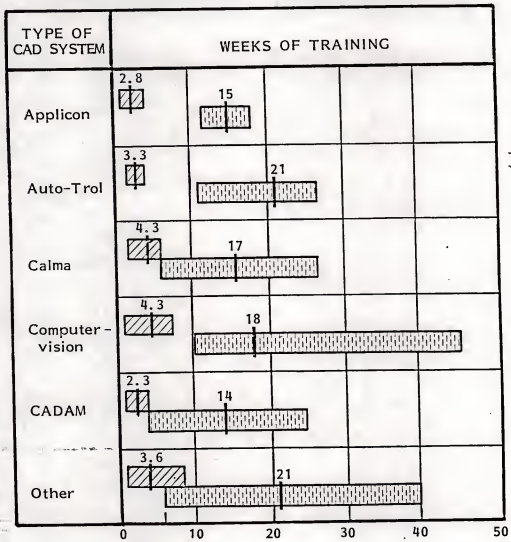
INPUT

MECHANICAL APPLICATIONS (Cont.)

- ENGINEERING MANAGEMENT
  - DATA COLLECTION AND REPORTING
  - SCHEDULING AND COSTING
- TECHNOLOGICAL DEVELOPMENTS
  - SOFTWARE TRENDS
  - HARDWARE TRENDS
- VENDOR OFFERINGS
  - SYSTEMS
  - SOFTWARE
- CASE STUDIES

Appl. Factors.

TIME REQUIRED TO TRAIN CAD USERS, AS REPORTED BY RESPONDENTS



Drop "on the job training and/or experience to reach full proficiency"

NOTE: 10% of the highest and 10% of the lowest responses were eliminated from this exhibit.

INPUT

ELECTRONIC APPLICATIONS

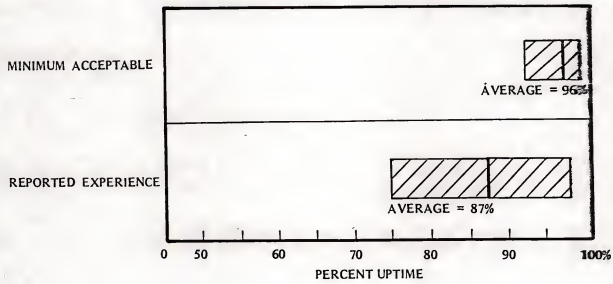
INPUT

ELECTRONIC APPLICATIONS

- DRIVING FORCES AND TRENDS
  - INDUSTRY NEEDS
  - SOFTWARE EFFORTS
  - COMPETITIVE FORCES
- CAD/CAM STATUS
  - INSTALLED BASE AND PROJECTED PURCHASES
  - SYSTEMS USAGE
  - ADEQUACY OF FEATURES (IC & PCB)
- ECONOMIC ISSUES
  - JUSTIFICATION AND BENEFITS
  - COSTS
- USER PREFERENCES AND NEEDS
  - DISTRIBUTED SYSTEMS AND INTELLIGENCE
  - INTEGRATION
  - SOFTWARE REQUIREMENTS
  - RELIABILITY
  - DISPLAY TECHNOLOGIES
- VENDOR TRENDS
  - HARDWARE
  - SOFTWARE
- CASE STUDIES

- How are vendors supporting
- In Electronic ykei is
  unacceptable
- will be more

SYSTEM AVAILABILITY
EXPECTED AND RECEIVED



INPUT

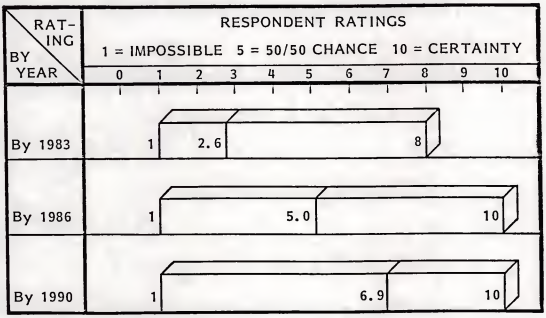
ARCHITECTURAL APPLICATIONS

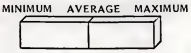
ARCHITECTURAL APPLICATIONS

- DRIVING FORCES AND TRENDS
  - PERSONNEL
  - PRODUCTIVITY
  - COMPETITION
  - INHIBITING FORCES
- STATUS
  - MARKET PROJECTIONS
  - USER AND VENDOR ACTIVITIES
  - USER RATINGS
- MANAGEMENT AND ECONOMIC ISSUES
  - PRODUCTIVITY
  - COSTS
  - SYSTEM JUSTIFICATION
- USER PREFERENCES AND NEEDS
  - INTEGRATION
  - SECURITY
  - SYSTEM FEATURES
  - OUTPUT NEEDS AND RATINGS
- VENDOR TRENDS
- ~~CASE STUDIES~~

• Implications is people issue.

LIKELIHOOD OF DRAWING OBSOLESCENCE



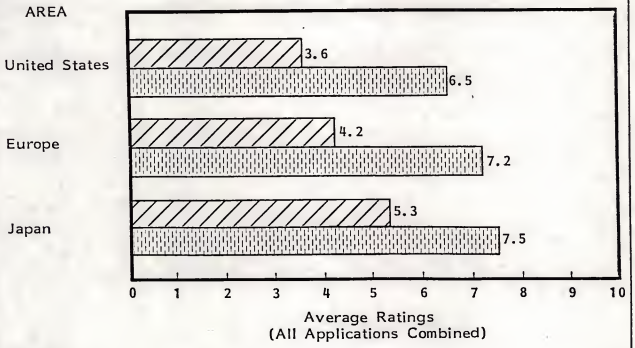


INPUT

INTERNATIONAL ADDENDUM

- COMPARATIVE VOLUME
- ADD PERSPECTIVE TO U.S. RESULTS
- INTERNATIONAL OVERVIEWS
  - UNITED KINGDOM
  - WEST GERMANY
  - FRANCE
  - JAPAN
- COMPARISON OF RESEARCH RESULTS
  - GENERAL ISSUES
  - ELECTRONICS ISSUES
  - MECHANICAL AND ARCHITECTURAL ISSUES
- CONCLUSIONS AND RECOMMENDATIONS

RESPONDENT RATINGS STATUS OF CAD/CAM INTEGRATION



SCALE: 1 = No Progress, 10 = Completely Integrated

INPUT

STUDY FEES

- BASIC REPORT PACKAGE.....$9,500 7,500
  - USER CONSIDERATIONS
  - INTERNATIONAL ADDENDUM
  - ONE APPLICATION VOLUME
- ADDITIONAL APPLICATION VOLUMES (EACH)..$5,000 3,500
- MARKET ANALYSIS AND FORECASTS.....$4,500 3,000

CAE/M

CAD/CAM SUBSCRIPTION PROGRAM

INPUT

OBJECTIVES AND BENEFITS

- EXTENSION TO MULTICLIENT STUDY
  - ADDRESS CLIENT CONCERNS
  - ADD NEW INFORMATION
  - EXPAND KEY TOPICS
- CURRENT AND LONG-TERM DECISION SUPPORT
  - PLANNING
  - MANAGEMENT
- INDUSTRY AWARENESS
  - MARKET TRENDS AND DYNAMICS
  - TECHNOLOGY DEVELOPMENTS AND TRENDS
  - USER EXPERIENCES AND NEEDS

OBJECTIVES AND BENEFITS (Cont.)

- SUPPLEMENT AND COMPLEMENT CLIENT EFFORTS
  - IN-DEPTH RESEARCH AND ANALYSIS
  - UNBIASED INFORMATION
  - OPTIMIZE RESEARCH EXPENDITURES
- ADDRESS KEY CONCERNS
  - USERS
  - VENDORS
- PROVIDE CLIENT FORUM
  - CLIENT CONFERENCE

THE

PROGRAM OVERVIEW

- ON-GOING, ANNUAL PROGRAM
  - JULY 1 TO JUNE 30
- REPORTS
  - ANNUAL REPORT
  - PLANNING SUPPORT STUDIES
  - TECHNOLOGY AND MANAGEMENT REPORTS. ISSUE ~~BRIEFS~~
- ANNUAL CLIENT CONFERENCE
- INQUIRY SERVICE

DELIVERABLES

all 4 Need deliverables.

- ANNUAL REPORT
  - MARKET ANALYSIS AND FORECASTS
  - MANAGEMENT PLANNING ISSUES
  - BUDGETS AND OPERATING DATA
  - VENDOR ANALYSES
  - TECHNOLOGY ISSUES AND TRENDS

1 four

- PLANNING SUPPORT STUDIES
  - (3) INTEGRATION PLANNING AND MANAGEMENT
  - (1) SYSTEM EVALUATION, SELECTION AND JUSTIFICATION
  - (2) DISTRIBUTED SYSTEMS AND NETWORKING

- TECHNOLOGY AND MANAGEMENT ISSUE ~~BRIEFS~~ REPORTS.
  - (5) ~~SOFTWARE DEVELOPMENTS AND TRENDS~~
  - (3) PERSONNEL ISSUES
  - (2) SYSTEMS MANAGEMENT ISSUES
  - (4) ~~GOVERNMENT AND INDUSTRY PROGRAMS~~

- CLIENT CONFERENCE
- INQUIRY SERVICE
- LIBRARY PRIVILEGES.

(2) MODELING FOR MECHANICAL DESIGN

INPUT

Planning Support Studies

- (2) Integration Planning and Management
  - Analysis, planning and budgeting
  - Organization, coordination, and management
  - Technical and organizational issues
  - Vendor considerations
  - Resource requirements
  - Case studies
- (1) System Evaluation, Selection, and Justification
  - Operations measurement and analysis
  - Data collection and requirements analysis
  - Criteria setting and follow-up
  - Vendor considerations
  - Evaluation and selection
  - Proposal/recommendation
- (3) Distributed Systems and Networking
  - Requirements analysis and planning
  - Hardware/software issues and products
  - Management and organizational issues
  - Data base considerations
  - Vendor considerations

Client membership to this program will be invited to suggest specific questions and topics to be included in the various studies

combine on 1.

SUMMARY

OBJECTIVES AND BENEFITS

- CURRENT AND LONG-TERM DECISION SUPPORT
  - PLANNING
  - MANAGEMENT
- INDUSTRY AWARENESS
  - MARKET TRENDS AND DYNAMICS
  - TECHNOLOGY DEVELOPMENTS AND TRENDS
  - USER EXPERIENCES AND NEEDS

OBJECTIVES AND BENEFITS

- SUPPLEMENT AND COMPLEMENT CLIENT EFFORTS
  - IN-DEPTH RESEARCH AND ANALYSIS
  - UNBIASED INFORMATION
  - OPTIMIZE RESEARCH EXPENDITURES
- ADDRESS KEY CONCERNS
  - USERS
  - VENDORS
- PROVIDE CLIENT FORUM
  - CLIENT CONFERENCE

PROGRAM FEES

- STANDARD FEE.....$12,000
- MULTICLIENT SUBSCRIBER DISCOUNT.....$ 2,000
  (FIRST YEAR)
- CORPORATE SUBSIDIARY DISCOUNT.....70%